



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Jeff PACE *et al*

Application No.: 09/605,654

Filed: June 28, 2000

For: FUEL INJECTOR HAVING A  
MODIFIED SEAT  
FOR ENHANCED COMPRESSED NATURAL  
GAS JET MIXING

#19/Recons.  
11/24/03  
Group Art Unit: 3752  
Examiner: Kim, C.

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Sir:

**REQUEST FOR RECONSIDERATION**  
**UNDER 37 C.F.R. § 1.116**

In response to the Final Office Action mailed 18 August 2003, for which the period of response extends through 18 November 2003, reconsideration of the application is requested in view of the following remarks.

The Final Office Action issued 18 August 2003 has been reviewed and the comments of the U.S. Patent and Trademark Office have been considered. No claim has been amended. Claims 2, 5, 7-24 have been withdrawn from consideration pursuant to a restriction and election requirement. Accordingly, Applicants request reconsideration of all pending claims.

Claims 1, 3, 4 and 6 stand rejected under 35 U.S.C. § 102 as being anticipated by PCT Publication No. WO 97/49911 published 31 December 1997 to Rembold *et al* ("Rembold '911"). Claims 1, 3, 4, and 6 stand rejected under 35 U.S.C. § 103 as being obvious over Rembold '911. U.S. Patent No. 6,027,050 to Rembold *et al* ("Rembold '050") is provided by the Examiner for

translation of Rembold '911. Applicants respectfully traverse these rejections because Rembold '911 fails to teach or suggest the claimed invention as a whole. In order to appropriately articulate reasons why the rejections should be withdrawn, applicants rely upon Rembold '050, as provided by the USPTO, for translation of Rembold '911.

Claim 1 recites a fuel injector that includes, *inter alia*, a plurality of passages. Each of the plurality of passages has a passage surface extending along a central axis such that each central axis intersects the longitudinal axis.

In sharp contrast, Rembold '911 shows in each of Figures 4, 6, and 9 that each of the passages 34 has a central axis (not numbered) offset to the longitudinal axis A by a specified distance such as, for example "d" in Figure 4, "d<sub>1</sub>" and "d<sub>2</sub>" in Figure 6. Because the central axis of each of the passages 34 is offset instead of intersecting the longitudinal axis, Rembold '911 fails to anticipate claim 1.

Notwithstanding this deficiency in Rembold '911, the Office Action proposes to modify Rembold to eliminate the offset spacing intervals of Rembold '911 as a matter of routine optimization in an attempt to reach the claimed invention as a whole. Rembold specifically requires some interval spacing to achieve the results of a particular fuel spray configuration. In particular, U.S. Patent No. 6,027,050 to Rembold et al ("Rembold '050"), which claims priority to the same PCT Publication Number as Rembold '911, states that the fuel channels 34 are offset so that the fuel jets run past each other to form a fuel cloud with strands corresponding to the fuel jets (col. 5, lines 32-35). To achieve this result, Rembold '050 specifically states that there must be different circumferential distance intervals (col. 5, lines 38-40); the fuel channels 34 are disposed variably offset to the axis A (col. 6, line 18); and the fuel jets can strike the wall 41 or needle 39 instead of each other. Thus, Rembold '050, which the USPTO represents is a translation of Rembold '911, specifically requires some spacing to induce a fuel cloud by fuel jets running past each other due to the offset spacing relative to axis A. Consequently, any routine optimization of the spacing distance "d", "d<sub>1</sub>" and "d<sub>2</sub>" would be to optimize the offset spacing so that Rembold '911 can achieve the desired fuel cloud pattern, and not eliminate the offset spacing altogether. That is, the proposed routine optimization of Rembold '911 would still provide for some offset spacing instead of no offset spacing between the fuel channels 34 and the axis A, as hypothesized by the Office Action. Absent the benefits of applicants' disclosure, there is no motivation or suggestion to modify Rembold in a manner contrary to his

teaching for fuel channels 34. Because the legal basis for modifying Rembold is not well supported, claim 1 is patentable over Rembold '911 for at least this reason.

Assuming, *arguendo*, that there could be proper motivation or suggestion, either in the prior art or other objective evidence, to modify the fuel channels 34 of Rembold '911 to have no offset spacing relative to axis A, applicants respectfully submit that one of ordinary skill in the art would not make such modification to Rembold '911. Rembold '911 specifically teaches one of ordinary skill to provide the offset spacing in order to achieve the desired fuel cloud. Even though one of ordinary skill in the art could hypothetically modify Rembold '911, such person would not do so because the modification would prevent Rembold '911 from generating the specified fuel cloud with spray strands corresponding to the fuel channels 34 as provided by the offset spacing. As noted at MPEP §2143.01 (8th Ed., Rev. 1, Feb. 2003), “[i]f the proposed modification would render the prior art invention unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.” Accordingly, claim 1 is patentable because Rembold '911 fails to teach or suggest features of the claimed invention as a whole.

Claims 3, 4, and 6 depend from allowable claim 1, and therefore are also in condition for allowance, as well as for reciting additional features.

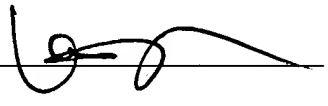
**CONCLUSION**

In view of the foregoing remarks, applicants respectfully request the entry, reconsideration and reexamination of this application and allowance of the pending claims 1-24. Applicants respectfully invite the Examiner to contact the undersigned at (202) 739-5203 if there are any outstanding issues that can be resolved via a telephone conference.

**EXCEPT** for issue fees payable under 37 C.F.R. §1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account No. 50-0310. This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. §1.136(a)(3).

Respectfully submitted,

Date: 18 November 2003  
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